

What is claimed is:

1. A method of limiting communication access between wireless LAN terminals of a wireless LAN, comprising the steps of:
  - allocating different subnetwork addresses to respective wireless LAN terminals;
  - 5 setting default gateways of the respective wireless LAN terminals as a single access limiter; and
  - returning a communication packet between the wireless LAN terminals from said access limiter which is set as said default gateways rather than a wireless LAN access point, for thereby providing an access
  - 10 limiting function to limit communication access between the wireless LAN terminals without modifying the existing wireless LAN access point.
2. A method according to claim 1, wherein said access limiter has two LAN interfaces connected respectively to a wired terminal and the wireless LAN access point, said wireless LAN terminals being connected to said wireless LAN access point, said access limiter having:
  - 5 an access limiting function for passing or dropping a received packet to thereby inhibit or permit communications between the terminals;
  - a band limiting function for buffering a received packet to process audio packets with priority over other packets;
  - a routing function for distributing packets selectively to said wired
  - 10 terminal and said wireless LAN access point depending on a destination of the packets;
  - a DHCP server for allocating IP addresses having different subnets

for the respective terminals in response to DHCP requests from said wired LAN terminals; and

15           an ARP server installed in an existing IP protocol stack.

3.       A method according to claim 2, wherein when a first one of the wireless LAN terminals is turned on, said first wireless LAN terminal sends a DHCP request to the wireless LAN access point for automatically resolving its own IP address;

5           said wireless LAN access point, which operates as a simple bridge between a wireless LAN and a wired LAN, transfers the received DHCP request to the access limiter;

          said access limiter, which has a DHCP server function, returns a DHCP response to the DHCP request to said wireless LAN access point;

10          and

          said wireless LAN access point, which has received the DHCP response, converts the DHCP response from wired data to wireless data, sends the DHCP response to said first wireless LAN terminal to allow said first wireless LAN terminal to make IP communications according to IP

15          address information allocated from the DHCP server;

          wherein when a second one of the wireless LAN terminals is turned on, said second wireless LAN terminal sends a DHCP request to the wireless LAN access point for automatically resolving its own IP address;

          said wireless LAN access point, which operates as the simple bridge  
20          between a wireless LAN and a wired LAN, transfers the received DHCP request to the access limiter;

          said access limiter, which has the DHCP server function, returns a

DHCP response to the DHCP request to said wireless LAN access point;  
and

25           said wireless LAN access point, which has received the DHCP  
response, converts the DHCP response from wired data to wireless data,  
sends the DHCP response to said second wireless LAN terminal to allow  
said second wireless LAN terminal to make IP communications according  
to IP address information allocated from the DHCP server;

30           wherein said first wireless LAN terminal sends a packet destined for  
said second wireless LAN terminal to said access limiter; and

          said access limiter transfers the received packet, which is destined  
for said second wireless LAN terminal, to said second wireless LAN  
terminal.

4.       A method according to claim 3, wherein when said first  
wireless LAN terminal is turned on, said first wireless LAN terminal sends a  
DHCP request to the wireless LAN access point for automatically resolving  
its own IP address;

5           since the DHCP request is a broadcast packet, said wireless LAN  
access point transfers the DHCP request to said access limiter on a wired  
LAN, and broadcasts the DHCP request to said second wireless LAN  
terminal;

          said access limiter, which has received the DHCP request, sets its  
10   own IP address to a predetermined value, and sends IP address  
information as a response to said first wireless LAN terminal; and

          said second wireless LAN terminal, which has received the DHCP  
request, drops the received packet as the DHCP server is not activated;

wherein when said second wireless LAN terminal is turned on, said  
15 second wireless LAN terminal sends a DHCP request to the wireless LAN  
access point for automatically resolving its own IP address;

since the DHCP request is a broadcast packet, said wireless LAN  
access point transfers the DHCP request to said access limiter on the  
wired LAN, and broadcasts the DHCP request to said first wireless LAN  
20 terminal;

said access limiter, which has received the DHCP request, sets its  
own IP address to a predetermined value, and sends IP address  
information as a response to said second wireless LAN terminal; and

said first wireless LAN terminal, which has received the DHCP  
25 request, drops the received packet as the DHCP server is not activated;

wherein when a packet is to be sent from said first wireless LAN  
terminal to said second wireless LAN terminal,

since a subnet of said first wireless LAN terminal is different from a  
subnet of said second wireless LAN terminal, before said first wireless LAN  
30 terminal sends the packet to said access limiter set as said default  
gateways, said first wireless LAN terminal sends an ARP request to  
resolve a MAC address of said default gateways;

said wireless LAN access point, which has received said ARP  
request, transfers the ARP request to said access limiter on the wired LAN  
35 and said second wireless LAN terminal;

said access limiter which has a same address returns a response to  
said ARP request, and said second wireless LAN terminal which has a  
different address drops the packet;

since said first wireless LAN terminal has had the MAC address

40 resolved by the ARP request, said first wireless LAN terminal sends a packet destined for said second wireless LAN terminal to said access limiter; and

if said access limiter is to permit communications between the wireless LAN terminals, the access limiter returns the received packet and  
45 sends the received packet to said second wireless LAN terminal.

5. A method according to claim 3, wherein when said first wireless LAN terminal is turned on, said first wireless LAN terminal sends a DHCP request to the wireless LAN access point for automatically resolving its own IP address;

5 since the DHCP request is a broadcast packet, said wireless LAN access point transfers the DHCP request to said access limiter on a wired LAN, and broadcasts the DHCP request to said second wireless LAN terminal;

said access limiter, which has received the DHCP request, sets its  
10 own IP address to a predetermined value, and sends IP address information as a response to said first wireless LAN terminal; and

said second wireless LAN terminal, which has received the DHCP request, drops the received packet as the DHCP server is not activated;

wherein when said second wireless LAN terminal is turned on, said  
15 second wireless LAN terminal sends a DHCP request to the wireless LAN access point for automatically resolving its own IP address;

since the DHCP request is a broadcast packet, said wireless LAN access point transfers the DHCP request to said access limiter on the wired LAN, and broadcasts the DHCP request to said first wireless LAN

20 terminal;

said access limiter, which has received the DHCP request, sets its own IP address to a predetermined value, and sends IP address information as a response to said second wireless LAN terminal; and

said first wireless LAN terminal, which has received the DHCP  
25 request, drops the received packet as the DHCP server is not activated;

wherein when a packet is to be sent from said first wireless LAN terminal to said second wireless LAN terminal,

since a subnet of said first wireless LAN terminal is different from a subnet of said second wireless LAN terminal, before said first wireless LAN  
30 terminal sends the packet to said access limiter set as said default gateways, said first wireless LAN terminal sends an ARP request to resolve a MAC address of said default gateways;

said wireless LAN access point, which has received said ARP request, transfers the ARP request to said access limiter on the wired LAN  
35 and said second wireless LAN terminal;

said access limiter which has a same address returns a response to said ARP request, and said second wireless LAN terminal which has a different address drops the packet;

since said first wireless LAN terminal has had the MAC address  
40 resolved by the ARP request, said first wireless LAN terminal sends a packet destined for said second wireless LAN terminal to said access limiter; and

if said access limiter is to inhibit communications between the wireless LAN terminals, the access limiter drops the received packet.

6. A method according to claim 3, wherein when said first wireless LAN terminal is turned on, said first wireless LAN terminal sends a DHCP request to the wireless LAN access point for automatically resolving its own IP address;

5 since the DHCP request is a broadcast packet, said wireless LAN access point transfers the DHCP request to said access limiter on a wired LAN, and broadcasts the DHCP request to said second wireless LAN terminal;

said access limiter, which has received the DHCP request, sets its  
10 own IP address to a predetermined value, and sends IP address information as a response to said first wireless LAN terminal; and

said second wireless LAN terminal, which has received the DHCP request, drops the received packet as the DHCP server is not activated;

wherein when said second wireless LAN terminal is turned on, said  
15 second wireless LAN terminal sends a DHCP request to the wireless LAN access point for automatically resolving its own IP address;

since the DHCP request is a broadcast packet, said wireless LAN access point transfers the DHCP request to said access limiter on the wired LAN, and broadcasts the DHCP request to said first wireless LAN  
20 terminal;

said access limiter, which has received the DHCP request, sets its own IP address to a predetermined value, and sends IP address information as a response to said second wireless LAN terminal; and

said first wireless LAN terminal, which has received the DHCP  
25 request, drops the received packet as the DHCP server is not activated;

wherein when a packet is to be sent from said first wireless LAN

terminal to said second wireless LAN terminal,

since a subnet of said first wireless LAN terminal is different from a subnet of said second wireless LAN terminal, before said first wireless LAN  
30 terminal sends the packet to said access limiter set as said default gateways, said first wireless LAN terminal sends an ARP request to resolve a MAC address of said default gateways;

said wireless LAN access point, which has received said ARP request, transfers the ARP request to said access limiter on the wired LAN  
35 and said second wireless LAN terminal;

said access limiter which has a same address returns a response to said ARP request, and said second wireless LAN terminal which has a different address drops the packet;

since said first wireless LAN terminal has had the MAC address  
40 resolved by the ARP request, said first wireless LAN terminal sends a packet destined for said second wireless LAN terminal to said access limiter; and

if said access limiter is to buffer communications between the wireless LAN terminals, the access limiter performs priority control of the  
45 received packet depending on a property thereof.